

# Claims

- [c1] 1. A method for determining a production plan comprising:
- performing a pre-processing rescheduling of the timing of purchase order receipts into earlier time periods;
  - solving core production planning system equations using rescheduled purchase order receipts; and
  - performing a post-processing rescheduling of the timing of said purchase order receipts into later time periods.
- [c2] 2. The method of claim 1, wherein said pre-processing rescheduling is based upon a field that indicates whether a receipt may be rescheduled to an earlier point in time.
- [c3] 3. The method of claim 1, wherein said pre-processing rescheduling is based upon frozen zone rules.
- [c4] 4. The method of claim 1, wherein said post-processing rescheduling is based upon one of a date of need, frozen zone rules, and date tolerances.
- [c5] 5. The method of claim 1, further comprising sorting of purchase order receipts.

- [c6] 6. The method of claim 5, wherein said sorting of purchase order receipts is based upon one of arrival dates, purchase order receipt quantity, and the flexibility of purchase order receipt movement with respect to frozen zone rules.
- [c7] 7. The method of claim 1, further comprising recomputing ending inventory levels to reflect said post-processing rescheduling.
- [c8] 8. A method of rescheduling timing of when items on purchase orders are scheduled to be received in a linear programming production planning system, said method comprising:
- performing a pre-processing rescheduling of the timing of purchase order receipts into the earliest time period allowable;
  - sorting said purchase order receipts; and
  - performing a post-processing rescheduling of the timing of said purchase order receipts in the order established by said sorting process, wherein said post-processing rescheduling process reschedules the timing of purchase order receipts into the latest time period allowable.
- [c9] 9. The method in claim 8, wherein said pre-processing

rescheduling is limited by flags associated with said purchase order receipts that one of prevent said purchase order receipts from being rescheduled, and limit the extent to which said purchase order receipts can be rescheduled.

[c10] 10. The method in claim 8, wherein said sorting comprises:

sorting said purchase order receipts into different classes of rescheduling flexibility;

sorting said purchase order receipts within each of said classes of rescheduling flexibility into different classes of arrival dates; and

sorting said purchase order receipts within each of said classes of arrival dates based on quantities within said purchase order receipts.

[c11] 11. The method in claim 8, wherein said post-processing rescheduling process reschedules the timing of each of said purchase order receipts into the latest time period before the corresponding inventory level would be depleted to zero.

[c12] 12. The method in claim 8, wherein if a purchase order receipt timing can be extended beyond the latest date of the planning horizon of said linear programming production planning system, said purchase order receipt is

eliminated.

- [c13] 13. The method in claim 8, further comprising recomputing ending inventory levels to reflect said post-processing rescheduling of the timing of purchase order receipts.
- [c14] 14. The method in claim 8, wherein said post-processing rescheduling process limits rescheduling of said purchase order receipts to comply with contractual obligations and to avoid trivial rescheduling.
- [c15] 15. A method of rescheduling timing of when items on purchase orders are scheduled to be received in a linear programming production planning system, said method comprising:
- performing a pre-processing rescheduling of the timing of purchase order receipts into the earliest time period allowable;
  - solving core production planning system equations using rescheduled purchase order receipts;
  - sorting said purchase order receipts according to rescheduling flexibility; and
  - performing a post-processing rescheduling of the timing of each of said purchase order receipts in the order established by said sorting process, wherein said post-processing rescheduling process resched-

ules the timing of purchase order receipts into the latest time period allowable.

[c16] 16. The method in claim 15, wherein said pre-processing rescheduling is limited by flags associated with said purchase order receipts that one of prevent said purchase order receipts from being rescheduled, and limit the extent to which said purchase order receipts can be rescheduled.

[c17] 17. The method in claim 15, wherein said sorting comprises:

sorting said purchase order receipts into different classes of rescheduling flexibility;

sorting said purchase order receipts within each of said classes of rescheduling flexibility into different classes of arrival dates; and

sorting said purchase order receipts within each of said classes of arrival dates based on quantities within said purchase order receipts.

[c18] 18. The method in claim 15, wherein said post-processing rescheduling process reschedules the timing of each of said purchase order receipts into the latest time period before the corresponding inventory level would be depleted to zero.

- [c19] 19. The method in claim 15, wherein if a purchase order receipt timing can be extended beyond the latest date of the planning horizon of said linear programming production planning system, said purchase order receipt is eliminated.
- [c20] 20. The method in claim 15, further comprising recomputing ending inventory levels to reflect said post-processing rescheduling of the timing of purchase order receipts.
- [c21] 21. A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform a method of rescheduling timing of when items on purchase orders are scheduled to be received in a linear programming production planning system, said method comprising:
- performing a pre-processing rescheduling of the timing of purchase order receipts into the earliest time period allowable;
  - sorting said purchase order receipts; and
  - performing a post-processing rescheduling of the timing of said purchase order receipts in the order established by said sorting process, wherein said post-processing rescheduling process reschedules the timing of purchase order receipts into the latest time period allowable.

[c22] 22. The program storage device in claim 21, wherein said pre-processing rescheduling is limited by flags associated with said purchase order receipts that one of prevent said purchase order receipts from being rescheduled, and limit the extent to which said purchase order receipts can be rescheduled.

[c23] 23. The program storage device in claim 21, wherein said sorting comprises:  
    sorting said purchase order receipts into different classes of rescheduling flexibility;  
    sorting said purchase order receipts within each of said classes of rescheduling flexibility into different classes of arrival dates; and  
    sorting said purchase order receipts within each of said classes of arrival dates based on quantities within said purchase order receipts.

[c24] 24. The program storage device in claim 21, wherein post-processing rescheduling process reschedules the timing of each of said purchase order receipts into the latest time period before the corresponding inventory level would be depleted to zero.

[c25] 25. The program storage device in claim 21, wherein if a purchase order receipt timing can be extended beyond

the latest date of the planning horizon of said linear programming production planning system, said purchase order receipt is eliminated.

[c26] 26. The program storage device in claim 21, wherein said method further comprises recomputing ending inventory levels to reflect said post-processing rescheduling of the timing of purchase order receipts.

[c27] 27. The program storage device in claim 21, wherein said post-processing rescheduling process limits rescheduling of said purchase order receipts to comply with contractual obligations and to avoid trivial rescheduling.